

Title: Selenization Temperature Ramping on Cu2ZnSnSe4 Solar Cells

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This research presents thorough, in-depth analysis of CZTSe thin film for high efficiency CZTSe solar cell. Efficiency of 6.78 % has been achieved. The CZTSe ab-sorber layer is prepared by sputtering with post seleni-zation on soda-lime glass (SLG) substrate coated with Mo. Precursor thin film stack is annealed under different first-stage low annealing temperatures ranging from 100 oC to 300 oC. Effects of annealing temperature on thin film characteristics and performance of CZTSe solar cells are discussed. Experimental results show that first stage annealing temperature can affect elemental concentration of Sn in CZTSe thin film, the homogene-osity of elemental distribution over the CZTSe thin film, and the thickness of MoSe2. CZTSe solar cell with Cu/(Zn+Sn) ratio of 0.77 has the highest efficiency of 6.78 %.

Biography

Dr. Kuo has completed his PhD degree in Electro-Optical Engineering from NCTU in 2002. He is the professor of Department of Electronic Engineering, Chang Gung University. Dr. Kuo has been authored and co-authored more than 75 international Journals related to compound semiconductor materials and devices.

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Session name/ number: Energy and Harvesting Materials
Category: Poster presentation